

ICOM

430 MHz ALL MODE TRANSCEIVER

**IC-475A** (U.S.A. VERSION)

**IC-475E** (EUROPE VERSION)

**IC-475H** (HIGH POWER VERSION)



Icom Inc.



# 430 MHz ALL MODE TRANSCEIVER IC-475A/E/H

## Get the best from the 430 MHz band.

Icom built the marvelous high-tech IC-475A/E/H for today's demanding 430 MHz operators. The IC-475A/E/H is designed to satisfy everyone, even serious satellite communication enthusiasts.

This advanced transceiver includes Icom's sophisticated DDS System ensuring high-speed data communications, high sensitivity, 75 W\* of output power, 99 memory channels and many more fine features.

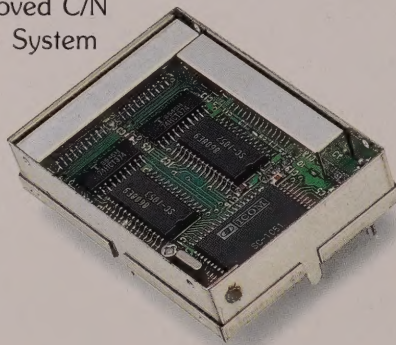
\*IC-475A/E: 25 W

### DDS System:

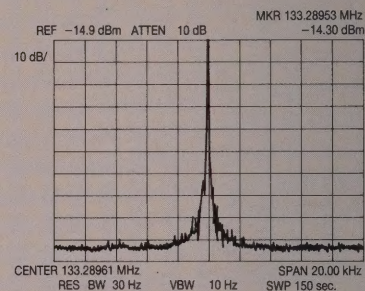
#### Icom's state-of-the-art frequency synthesizer system

Some PLL systems have difficulty meeting the lockup time demands placed on them by high-speed data communications. This is why Icom developed the innovative DDS (Direct Digital Synthesizer) System.

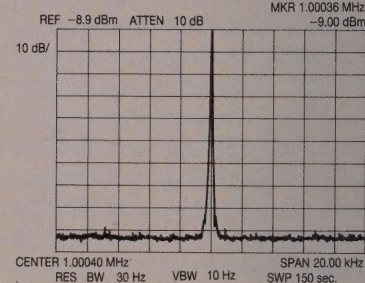
With a lockup time of just 5 msec. and improved C/N (Carrier-to-Noise ratio) characteristics, the DDS System allows you to handle packet radio quickly and smoothly.



C/N characteristics of popular PLL systems



C/N characteristics of the DDS PLL system





## Excellent transmit/receive characteristics

### Perfect operation in all modes

SSB, CW and FM modes are available. You can enjoy 430 MHz operation completely. The transceiver has CW full break-in capability and is most suitable for propagation experiments, satellite communications and for EME (moon bounce) operations.



### High sensitivity

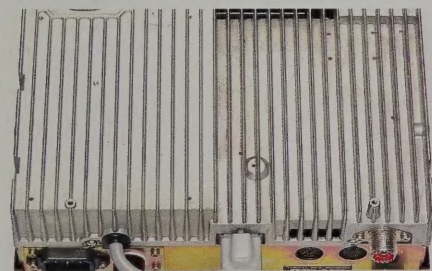
Superior sensitivity of less than  $0.1 \mu\text{V}$  for 10 dB S/N in SSB and CW modes is guaranteed with GaAs FET (3SK121) and J-FET (2SK125) in the RF circuit.

In addition, an optional mast-mount-type AG-35 WEATHERPROOF PREAMPLIFIER is available to pick up very weak signals.

### Stable transmission under full duty

The transceiver's power amplifier boasts a 75 W\* output power and low spurious emissions. Continuous stable output power is ensured with a large heatsink and quiet cooling fan.

\*IC-475A/E: 25 W



### Unyielding frequency stability

High-rated frequency stability at less than  $\pm 5 \text{ ppm}^{\ast 1}$  is assured. An even higher frequency stability of  $\pm 0.5 \text{ ppm}^{\ast 2}$  will be assured with an optional CR-64 HIGH-STABILITY CRYSTAL UNIT.

$\ast 1$   $0^{\circ}\text{C} \sim +50^{\circ}\text{C}$ ;  $+32^{\circ}\text{F} \sim +122^{\circ}\text{F}$

$\ast 2$   $-10^{\circ}\text{C} \sim +60^{\circ}\text{C}$ ;  $+32^{\circ}\text{F} \sim +140^{\circ}\text{F}$



CR-64 HIGH-STABILITY CRYSTAL UNIT

## Convenient functions for perfect operation

### Advanced interference and noise reduction system

#### • Notch filter

In SSB mode, the notch filter removes beat signals with sharp attenuation characteristics. Average attenuation is approx. 25 dB.



#### • Noise blanker

The noise blanker effectively reduces pulse-type noise, for example, ignition noise from automobiles and ensures clear receiving.

### Data switch for packet radio operation

Packet radio operators' delight. When the switch is pushed, the IC-475A/E/H allows tremendous versatility as outlined below.

- High-speed transmit/receive switching is possible at approx. 5 msec. in FM mode and 7 msec. in SSB mode.
- Voice input from the microphone is automatically cut to prevent data errors.
- Input level from TNC or other terminal equipment via the ACC(1) connector is adjustable with the data level control.

### 99 memory channels

Each memory channel stores the operating frequency and mode. Required information for accessing a repeater such as offset frequency, subaudible tone frequency\* and other information can also be stored.

The desired memory channel contents can instantly be recalled. Moreover, the memory transfer function allows you to copy memory contents into a VFO.

\*Except Europe version.

### Programmable call channel

You can store your most-used frequency into a call channel, calling up the frequency with one-touch ease.

### Multiple scan functions

You can repeatedly search stations within a specified frequency range by using programmed scan.

Using memory scan, you can quickly search only for memory channels you wish to scan, skipping undesired ones.

Selected mode memory scan allows you to check memory channels sequentially that contain your desired operating mode.

### Complete CW functions

For CW operators, the transceiver has full and semi break-in capability with a sidetone circuit. Serious DX'ers will love an optional FL-32A CW NARROW FILTER that gives 500 Hz/-6 dB of good shape factor.

## Other attractive features

### Convenient satellite communications

Easy tuning for instant satellite communication is possible by connecting the IC-275A/E/H or IC-1275A/E through an optional CT-16 SATELLITE INTERFACE UNIT.



CT-16 SATELLITE INTERFACE UNIT

### Increased talk power with speech compressor

A specially designed AF speech compressor increases talk power and improves readability.

### Variable tone control

According to propagation conditions or your preference, you can adjust both transmit and receive audio tone characteristics continuously.

### Accepts external equipment

You can easily connect external equipment for data communications and a variety of other equipment to the ACC(1) connector.

### CI-V System for computer control

Utilizing an optional CT-17 CI-V LEVEL CONVERTER, many control functions can be carried out from a personal computer with an RS-232C port.



CT-17 CI-V LEVEL CONVERTER

### Additional features

- Built-in power supply for the IC-475A/E.
- Continuous adjustable output power.
- 1 MHz tuning step available for quick QSY'ing.
- Built-in SWR and center meter functions.
- Subaudible tone encoder for the U.S.A. version.
- 1750 Hz tone call function for Europe version.
- Quiet standby with an optional UT-34 TONE SQUELCH UNIT.
- Announces displayed frequency in English with an optional UT-36 VOICE SYNTHESIZER UNIT.
- Tuning control lock function to prevent accidental frequency changes.
- Duplex check switch that allows you to receive a repeater input frequency.



## SPECIFICATIONS

## GENERAL

- Frequency coverage : U.S.A. version 430.0000~450.0000 MHz  
Europe version 430.0000~440.0000 MHz  
Australia version 430.0000~450.0000 MHz  
Sweden version 432.0000~438.0000 MHz
- Number of memory channels : 99 channels plus P1, P2 and CALL CHANNEL
- Antenna impedance : 50  $\Omega$  (unbalanced)
- Frequency stability :  $\pm 5$  ppm (0°C~+50°C; +32°F~+122°F)
- Power supply requirement : 13.8 V DC  $\pm 15\%$ \*
- Current drain (at 13.8 V DC) : Transmitting At maximum output  
IC-475A/E Approx. 7.5 A  
IC-475H Approx. 20.0 A  
Receiving At maximum audio output  
Approx. 1.3 A  
Squelched  
Approx. 1.1 A
- Dimensions : 241(W)  $\times$  95(H)  $\times$  239(D) mm  
9.5(W)  $\times$  3.7(H)  $\times$  9.4(D) in  
(projections not included)
- Weight : IC-475A/E 6.3 kg; 13.9 lb  
IC-475H 6.0 kg; 13.2 lb
- Usable temperature range : -10°C~+60°C; +14°F~+140°F

## TRANSMITTER

- Emission modes : FM (F3), SSB (A3J), CW (A1)
- RF output power : IC-475A/E 2.5~25 W continuously adjustable  
IC-475H 10~75 W continuously adjustable
- Modulation system : FM Variable reactance frequency modulation  
SSB Balanced modulation
- Maximum frequency deviation :  $\pm 5$  kHz (FM mode)

- Spurious emissions : More than 60 dB below peak output power
- Carrier suppression : More than 40 dB below peak output power
- Unwanted sideband : More than 40 dB down with 1000 Hz AF input
- Microphone impedance : 600  $\Omega$

## RECEIVER

- Receive system : Quadruple conversion superheterodyne (SSB, CW)  
Triple conversion superheterodyne (FM)
- Receive modes : FM (F3), SSB (A3J), CW (A1)
- Intermediate frequencies : 1st 70.4515 MHz (FM, SSB)  
70.4506 MHz (CW)  
2nd 9.0115 MHz (FM, SSB)  
9.0106 MHz (CW)  
3rd 455 kHz (All modes)  
4th 9.0115 MHz (SSB)  
9.0106 MHz (CW)
- Sensitivity : FM Less than 0.18  $\mu$ V for 12 dB SINAD  
Less than 0.25  $\mu$ V for 20 dB NQL  
SSB, CW Less than 0.1  $\mu$ V for 10 dB S/N
- Squelch sensitivity : FM Less than 0.14  $\mu$ V  
SSB Less than 0.56  $\mu$ V
- Selectivity : FM 15.0 kHz/-6 dB 30.0 kHz/-60 dB  
SSB, CW 2.3 kHz/-6 dB 4.0 kHz/-60 dB
- Spurious response rejection : More than 70 dB
- Audio output impedance : 8  $\Omega$
- Audio output power : More than 2 W at 10% distortion with an 8  $\Omega$  load
- RIT variable range :  $\pm 9.99$  kHz

\*IC-475A/E: Power supply is built in.

All stated specifications are subject to change without notice or obligation.

## OPTIONS

- PS-55**  
AC POWER SUPPLY  
(13.8 V, 20 A)



- SP-7**  
EXTERNAL SPEAKER  
(8  $\Omega$ , 5 W)



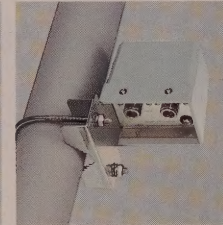
- SM-8**  
DESKTOP  
MICROPHONE



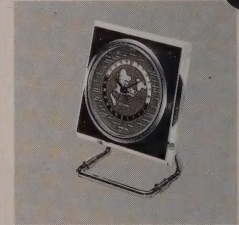
- SM-20**  
DESKTOP  
MICROPHONE



- AG-35**  
WEATHERPROOF  
PREAMPLIFIER



- GC-5**  
WORLD CLOCK



<b>CR-64</b>	HIGH-STABILITY CRYSTAL UNIT	<b>SM-6</b>	DESKTOP MICROPHONE
<b>CT-16</b>	SATELLITE INTERFACE UNIT	<b>IC-SP3</b>	EXTERNAL SPEAKER (8 $\Omega$ , 4 W)
<b>CT-17</b>	CI-V LEVEL CONVERTER	<b>SP-20</b>	EXTERNAL SPEAKER WITH AUDIO FILTERS (8 $\Omega$ , 5 W)
<b>FL-32A</b>	CW NARROW FILTER (500 Hz/-6 dB)	<b>UT-34</b>	TONE SQUELCH UNIT
<b>IC-MB5</b>	MOBILE MOUNTING BRACKET	<b>UT-36</b>	VOICE SYNTHESIZER UNIT
<b>MB-23</b>	CARRYING HANDLE		

Icom Inc. 6-9-16, Kamihigashi, Hirano-ku, Osaka 547, Japan Phone: 06 793 5301 Fax: 06 793 0013 Telex: 05277822 ICOMTR J

Count on us!

## Icom America Inc.

<Corporate Headquarters>  
2380 116th Avenue N.E., Bellevue, WA 98004, U.S.A.  
Phone: (206) 454-8155 Fax: (206) 454-1509  
Telex: 152210 ICOM AMER BVUE

<Customer Service>  
Phone: (206) 454-7619

<Regional Customer Service Centers>  
18102 Sky Park South, Suite 52-B, Irvine, CA 92714, U.S.A.  
Phone: (714) 852-8026 Fax: (714) 852-8716  
1777 Phoenix Parkway, Suite 201, Atlanta, GA 30349, U.S.A.  
Phone: (404) 991-6166 Fax: (404) 991-6327

## Icom (Europe) GmbH

Communication Equipment  
Himmelgeister Str. 100, 4000 Düsseldorf 1, F.R.G.  
Phone: 0211 346047 Fax: 0211 333639  
Telex: 8588082 ICOM D

## Icom (Australia) Pty. Ltd.

A.C.N 006 092 575  
7 Duke Street, Windsor, Victoria, 3181, Australia  
Phone: 03 529 7582 Fax: 03 529 8485  
Telex: AA 35521 ICOM AS

## Icom (UK) Ltd.

Unit 9, Sea St., Herne Bay, Kent, CT6 8LD, U.K.  
Phone: 0227 741741 Fax: 0227 360155  
Telex: 965179 ICOM G

## Icom France S.a

Zac de la Plaine, Rue Brindejonc des Moulinais  
BP 5804, 31505 Toulouse Cedex, France  
Phone: 61.20.31.49 Fax: 61.34.05.91  
Telex: 521515 ICOM FRA

Your local agent/dealer:

## Icom Canada

A Division of Icom America Inc.  
3071 #5 Road, Unit 9, Richmond, B.C., V6X 2T4, Canada  
Phone: (604) 273-7400 Fax: (604) 273-1900